

What is claimed is:

1. A tire air pressure monitoring device having a sensor which detects a physical quantity relating to tire air pressure, and a transmitter which sends signals detected by the sensor,

wherein the sensor is a sound pressure level sensor which detects a sound pressure level inside a tire cavity filled with air, the transmitter being enabled to send the signals only when the sound pressure level detected by the sound pressure level sensor is changed.

2. The tire air pressure monitoring device according to claim 1, wherein the sound pressure level detected by the sound pressure level sensor is a frequency around a resonance inside the tire cavity.

3. The tire air pressure monitoring device according to claim 2, comprising a processing unit which determines whether values of the sound pressure level signals detected by the sound pressure level sensor is changing around a preset threshold value corresponding to the resonance inside the tire cavity and enables the transmitter to send the signals only when the values are determined to be changing.

4. The tire air pressure monitoring device according to claim 1, comprising a power source of a battery for activation of the tire air pressure monitoring device.

5. The tire air pressure monitoring device according to claim 1, wherein the physical quantity is one of air pressure

and temperature inside the tire cavity.

6. A pneumatic tire having a tire air pressure monitoring device in a cavity of the tire, the tire air pressure monitoring device having a sensor which detects a physical quantity relating to tire air pressure, and a transmitter which sends signals detected by the sensor, the sensor being a sound pressure level sensor which detects a sound pressure level inside a tire cavity filled with air, the transmitter being enabled to send the signals only when the sound pressure level detected by the sound pressure level sensor is changed.

7. The pneumatic tire according to claim 6, wherein the sound pressure level detected by the sound pressure level sensor is a frequency around a resonance inside the tire cavity.

8. The pneumatic tire according to claim 7, wherein the tire air pressure monitoring device comprising a processing unit which determines whether values of the sound pressure level signals detected by the sound pressure level sensor is changing around a preset threshold value corresponding to the resonance inside the tire cavity and enables the transmitter to send the signals only when the values are determined to be changing.

9. The pneumatic tire according to claim 6, wherein the tire air pressure monitoring device comprises a power source of a battery for activation thereof.

10. The pneumatic tire according to claim 6, wherein the physical quantity is one of air pressure and temperature inside

the tire cavity.